

Title (en)

Safety device for electric battery cells and battery provided with such a device

Title (de)

Schutzvorrichtung für Batteriezellen und Batterie mit einer solchen Vorrichtung

Title (fr)

Dispositif de sécurité pour batterie d'accumulateurs électriques et batterie équipée de ce dispositif

Publication

EP 1111751 B1 20080213 (FR)

Application

EP 00403521 A 20001214

Priority

FR 9916330 A 19991223

Abstract (en)

[origin: EP1111751A1] In a battery comprising several, normally identical, modules (1,1'1,1), each with one or more parallelled cells, connected in series, each module is provided with two safeguarding shunt circuits, connected across its terminals (eg. 2',2). Each circuit is completed through a switching device (4,6), controlled by a release unit (5,7), which monitors the voltage across the module. One of the circuits includes a series resistance (3) and a bistable associated switch, eg. a relay. The switch in the other circuit (6) cannot revert to the open state after being closed, definitively short-circuiting the module. The release units control their respective switches; opt., a single unit performs both functions - opt. also, control is imposed by an external unit programmed to suit battery characteristics. The resistive circuit limits the discharge current to 1 or 10% of module nominal capacity, intervening generally when, with the module charging or fully charged, the voltage exceeds an upper threshold. The other circuit responds to voltages below a lower threshold. Together, they permit a progressive phasing out if failure is detected.

IPC 8 full level

H01M 10/44 (2006.01); **H02H 7/18** (2006.01); **H02J 7/00** (2006.01)

CPC (source: EP US)

H02J 7/0016 (2013.01 - EP US); **H02J 7/00308** (2020.01 - EP US); **H02J 7/00309** (2020.01 - EP US)

Cited by

CN102668307A; US2022368137A1; US11862999B2; US10974606B2; US11990776B2

Designated contracting state (EPC)

DE FR GB

DOCDB simple family (publication)

EP 1111751 A1 20010627; **EP 1111751 B1 20080213**; DE 60038000 D1 20080327; DE 60038000 T2 20090212; FR 2803123 A1 20010629; FR 2803123 B1 20020315; JP 2001236997 A 20010831; US 2001006747 A1 20010705; US 6741437 B2 20040525

DOCDB simple family (application)

EP 00403521 A 20001214; DE 60038000 T 20001214; FR 9916330 A 19991223; JP 2000388441 A 20001221; US 73938600 A 20001219